

## NH Integrated Pest Management Newsletter

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### Fruit Bud Stages This Week

Fruit bud stages at the UNH Woodman Horticulture Farm were as follows on Monday afternoon, May 3: Pioneer McIntosh Apple, pink; Red Haven Peach, bloom (Yes! There are a few blossoms on some varieties); Sam Sweet Cherry, bloom; Pears, bloom; and Blueberry, pink bud.

### Growing Degree Days

I'm afraid I don't have links to equipment to measure apple scab degree days for you now (hopefully later, to estimate end of primary apple scab season), but I thought you'd like to know about growing degree days. GDD's are computed on a 50°F base, and can be an aid for monitoring some of our apple pests (SJS for example). They are more commonly used to predict pests of ornamentals.

Dot Perkins (in Cooperative Extension's Merrimack County office) has set up a telephone line that reports this information. Like the fruit bud stages that I report, GDD's give a measure of how far ahead (or behind) you are, compared to elsewhere. Unlike bud stage info, the GDD info is useful through the whole season, especially for woody ornamentals growers.

Dot reports on 8 locations in Merrimack, Rockingham and Strafford Counties. You can call the telephone at any time, day or night. She updates it Tuesday mornings, and the number is 225-5505 extension 23.

GDD figures took a big jump this last week (warm!!!). Dot's report lists these for Monday 3<sup>rd</sup>: Greenland, 129; Durham, 130; Rochester, 130; Canterbury; 138; Loudon, 126; Chichester, 119; Boscawen, 135; and New London, 108. If you want to follow up on this information, start calling that number!

### NASS Fruit & Vegetable Survey

Dept. of Agriculture (FSA) people have asked me to remind you to participate in the NASS Fruit & Veg survey requests, when they come. Without reliable information on production and prices, many assistance programs have serious problems. If you help NASS, they'll help you!

### Tree Fruit Twilight Meeting May 25

Gould Hill Farm in Contoocook is the site for a Tree Fruit Twilight Mtg that George Hamilton has set up for 5:30 PM on Tuesday, May 25. I am disappointed that I'll be out of state and miss it. Ron Prokopy, Jon Clements, and Cheryl Smith are among the planned speakers. George has applied for PAT recertification credits. As usual, this meeting is free and open to the public.

## Notes on Winter Injury from Renee Moran's Newsletter

There is a chance that apple trees may have suffered injury from the severely cold temperatures that occurred this winter. Because there was little or no snow cover, soil temperatures may have dropped below what root tissues can tolerate. This would be more likely in sandier soils or on sites with no plant cover on the soil. Roots of apple trees are more tender than shoots and buds. They are hardy to temperatures as low as 20°F, but are killed when soil temperatures drop below this. M26 is a few degrees hardier than M7, which is the most tender of the commonly grown rootstocks. When roots are injured, trees will appear water stressed and fruit size will suffer. Fruit could also be easier to thin.

If you suspect winter injury, foliar application of urea at pink (3 lbs./100 gallons) may increase crop load. Very good weed control is also beneficial.

## Leafminers: Thresholds vs. When to Spray

The red sticky rectangle traps (that we use to monitor tentiform leafminers in apple trees) are to help us monitor population levels. We can see how many there are compared to other years, and tell if the numbers are high enough to warrant applying a leafminer insecticide. I still suggest this as the threshold: for McIntosh: a cumulative catch of 4 moths per trap by late tight cluster stage. For all other varieties: a cumulative catch of 8 moths per trap by late tight cluster stage. This tells you IF populations are high enough to treat. It doesn't mean automatically do it then.

Huh?

Just because numbers in your trap are high enough to warrant treatment, it doesn't mean that you must do it then. You **could** do it then if you were depending on a pesticide that must go on at pink, like Vydate. (By the way, you'd want to use Vydate at early pink, to avoid the chance of affecting fruit set.) Ambush, Asana, or Pounce could be used during pink stage. I trust you remember that these materials tend to be rough on predators that we try to protect. You could also apply Esteem or Intrepid at pink. They don't kill adults, but affect the caterpillars, right after they hatch.

You could wait until after the petals have fallen, and use 1) SpinTor plus penetrating surfactant, 2) Provado, 3) Agri-Mek plus horticultural spray oil, 4) Intrepid, or 5) Lannate. I hope I haven't left out any choices. The bottom line is that your window of opportunity to treat ranges from early pink through about first cover.

If you didn't use leafminer traps, you could monitor by counting the tiny sap-feeding mines on the foliage. I'll give counting instructions later. It is a bit tougher than counting white moths on red traps. The time for that will be after petal fall.

## Cedar-Apple Rust & Quince Rust

Pink is the bud stage when we usually expect to see significant releases from galls of rusts. Cedar-apple rust galls are found on red cedar trees. They look a bit like tiny, mis-shapen brown golf balls, with short brown pegs. At this time of year they are transformed by rainfall. Once they have been thoroughly soaked, long orange gelatinous arms grow out of them. One neighbor thought they looked a bit like orange Christmas tree ornaments. The spores that infect apple leaves are released from these "telial horns".

Quince rust galls are harder to spot. They look like slight swellings in the branches of common juniper. I found them almost impossible to see, until they get soaked in the rain. Then the same orange gelatinous things stick out of the branches, making it easy to see.

The galls release spores during rainy periods for a couple of weeks or more. Some apple varieties are quite susceptible to rusts. You could combat the diseases two major ways. One is to eliminate nearby red cedar and common juniper plants. The diseases **MUST** switch from these plants back to apple. Eliminating these other hosts eliminates the problem, without any spraying. OK, to be fair I'll admit that another alternative is to eliminate your apple trees. No apples, no cedar-

apple rust. That means that fungicide applications is actually alternative number three. Pruning and other techniques to promote rapid drying after rain will help to some degree.

Of course, you could also grow apple varieties that aren't very susceptible to rust. (Most of them aren't.) Golden Delicious is highly susceptible. It is the only one I see that I'd consider spraying, if eliminating the source wasn't possible. Moderately susceptible varieties include Cortland, Idared, Mutsu, and Jonagold.

## **Pink Stage is When We Expect Big Apple Scab Spore Releases to Start**

I think you know by now that daytime rains are our concern. Spores are triggered for release by daytime rains. After the ascospores land on unprotected foliage, the next hurdle is to germinate. The leaf surface must remain wet for this to occur. Germination period varies with temperature; as short as 6 or 7 hours if temperatures are in the 60's or low 70's, and as long as 48 hours if temperatures are very cold. Night time rains are a concern if they extend the wet period of a shower that began during the day. No, dew will not trigger spore release. You all knew that, right?

## **Do You Need to Check for Rosy Apple Aphid?**

Not every orchardist has to worry about rosy apple aphid. It is of greatest concern on Cortland trees. To a degree, we sometimes see a little damage on Delicious, Golden Delicious, Gravenstein, IdaRed, Jonagold, or Monroe. Narrow-leaved plantain ("English plantain") is a key alternate host for the aphids, so orchards with lots of this in the floor, and lots of Cortland trees would be high on the RAA risk list.

Rosy apple aphid injury on the fruit is stunting, vertical ridging, and distortion. Affected fruit are often too small to pick. Leaf symptoms of colonies include twisted, curled-up foliage. The aphids can be rosy, purplish, or yellowish. Some appear powdery. They are easy to control early, but quickly the leaves curl around the colony, protecting it from sprays. We used to say that pink stage was the last opportunity to treat, and was the strongly preferred timing. That has changed somewhat, now that we have insecticides like Provado and Esteem. Provado could be applied at petal fall, and still be fairly effective. Some damage has already occurred by then, but the same spray could control leafminers and white apple leafhopper. For Esteem, the label lists half-inch green as the preferred timing.

To check for RAA, look at 10 interior fruit clusters on 10 (susceptible variety only!) trees per block. Consider treatment if 1 or more clusters is infested. Please remember that a material we formerly used for RAA (Lorsban) is no longer allowed for foliar treatment after bloom.

## **More Pest Happenings at Pink Stage**

- European apple sawfly adults emerge.
- European red mite eggs hatch.
- Some apple pith moth larvae move to green shoots now, and bore in.
- Climbing cutworms sometimes chew up young tissue.
- Larvae of green pug moth are active. Greatest injury is on opening blossoms, especially stamens and pistils.
- Green fruitworm eggs have hatched, and larvae begin to feed.

## **Pest Happenings at Bloom**

- Mullein bug nymphs emerge.
- European apple sawflies lay eggs.
- Males of San Jose scale fly (females have no wings; stay put).

- Risk of spreading fire blight bacteria is greatest, especially if we have warm rain.
- Green pug larvae are largest; do most serious feeding.
- Fungal diseases continue to threaten: apple scab, calyx end rot, black rot, rusts.

## Hold Off Mowing For a While?

It may be advantageous to wait to mow the orchard floor until primary ascospore season for apple scab is completed. That way, the vegetation in the orchard floor will serve as an additional obstacle to the ascospores being released.

## What About Vertebrate Pests?

Well... they're still around, but no critical changes in stages. Deer seem to ramp up feeding now, but with buds opening everywhere, perhaps pressure will drop off a bit for you. If deer start feeding in your orchard now, one risk is that it becomes a habit that is hard to break. This is especially true in June, when does often prefer the tall grass in orchards to give birth and hide fawns.

Meadow voles have plenty of grass to eat, so they stop chewing on apple bark (yuck!) in favor of tender grass.

Cedar waxwings occasionally cause concern in a small orchard by feeding on blossoms, but I've only seen them eat a few, then move on. You've got bigger worries than that.

## Bill Lord's Indar Request Approved (hold your applause 'till the end)

Just before I sent out this newsletter, I learned that EPA has approved Bill's request for a section 18 emergency exemption to use Indar (fenbuconazole) on blueberry in NH. Growers **MUST** have the NH label, which you can get from your pesticide dealer. There are some use restrictions:

- Indar 75WSP, EPA Registration #62719-421, manufactured by Dow Agrosiences is the material allowed.
- You may also use existing stocks of Indar 75 WSP purchased from Rohm and Haas (EPA registration #707-239).
- The maximum application rate is 2 ounces of product (1.5 ounces AI) per acre, with a maximum of 5 applications per season (10 ounces total product per acre maximum).
- Do not apply Indar within 30 days of harvest
- Do not apply Indar within 75 feet of streams, rivers, ponds, lakes, or reservoirs.

In case you forgot, Indar is very effective for controlling mummyberry.



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